REMARKS

Summary of the Invention

The invention is a combination of an optical data burst transmitting system (optical burst switching - OBS) and a data packet transmitting system. In the invention, a data burst BURST 1 (FIG 2) is first transmitted between two nodes including a plurality of data packets, and second the connection is maintained to transmit data burst "on-the-fly during the consecutive phase" until the same channel (same wavelength and fiber) is also needed for another connection transmitting a second data burst BURST 2 and to maintain the connection.

Claim Rejections – 35 USC § 103

Claims 9, 10-11 and 14 have been rejected under 35 USC 103(a) as unpatentable over Xiong, further in view of Corbalis. The rejection is respectfully traversed.

With respect to claim 9, the Examiner states that Xiong teaches:

1) "a method for transmitting data bursts" between a first communication network node and a second communication network node; 2) "reserving a data channel"; 3) "transmitting a first data burst having aggregated data packets" on the data channel; 4) "retaining the data channel for a consecutive transmission phase" after transmitting a first data (burst); 5) "transmitting additional data packets between the nodes during the consecutive phase (column 2, line 37-40)".

With respect to 1), "a method for transmitting data packets": Only the transmission of burst is disclosed by Xiong. The purpose of the Xiong invention is disclosed in col. 2, line 37-40, which states: "The present invention provides yet another technical advantage by reducing the gaps/voids between bursts transmitted on reserved data channels, which in turn increase the data channel utilization." Xiong describes only the transmission of data burst and not the transmission of non aggregated (IP) data packets on-the-fly, as required by the claimed invention. This general feature does not explain how the data packets are transmitted nor if

data burst and non aggregated data packets are transmitted. In contrast to Xiong, the instant invention bursts and data packets are transmitted (FIG 2).

With respect to 2), "reserving a data channel": In a conventional optical burst switching system, first a time slot is reserved for transmitting a data burst, and the channel is only blocked for other connections while said data burst is transmitted. Xiong uses this method for conventional transmission of data bursts too. Xiong describes in (col. 9, lines 66-67 and more exact in col. 4, lines 33-47 and in addition column 8, lines 27-42 that according to his invention a channel (wavelength) in a "reserved state" is completely reserved for the transmission via a single connection; that means the channel is blocked for all other connections and "bursts cannot be scheduled on the reserved data channel in the normal way" (col. 4, lines 44-47). The channel reservation is controlled by the traffic at the sending node and only this node cancels the reservation when the traffic drops below a threshold (col. 8, lines 35-38).

According to the instant invention, the channel λ1 is a priory reserved for the transmission of a single data burst BURST1. This is the standard burst reservation method, which is explained in paragraph [0017] of the filed Substitute Specification. Then the connection – not the reservation – is retained for transmitting data packets in the consecutive phase. According to paragraphs [0017] and [0018], the consecutive phase is regarded as free and can be interrupted for other burst traffic connections transmitting BURST2 (FIG. 2 and paragraph [0017]) as soon as this is required. The channel is not blocked as taught by Xiong (col. 4, lines 33-47) but can be used for additional connections.

With respect to 3), "transmitting a first data burst having aggregated data packets": Xiong and the system in the instant our invention are transmitting a first data burst (and a plurality of bursts) via a new connection. However, in the instant invention, after the first burst is transmitted and the channel is available during the consecutive phase, only data packets are transmitted on-the-fly.

With respect to 4), "retaining the data channel for a consecutive transmission phase": This can not be derived from Fig 2 showing an optical network. Xiong teaches a reservation of the data channel as explained under 2), which is quite different from retaining this channel for further transmission of non aggregated data packets as already explained above. According to the instant invention, the "retaining connection" is used to transmit further data packets over the channel. The connection is interrupted as soon as the channel is needed for another connection.

With respect to 5), "transmitting additional <u>packets</u> between the nodes during the consecutive phase": Xiong, at col. 2, line 37-40, explains that only the gaps between bursts are reduced. Xiong only discloses that data bursts are transmitted. See also 1). Again, Xiong transmits only data bursts, not non aggregated data packets. According to the instant invention, the non aggregated data packets are transmitted "on-the-fly," as explained by FIG. 2 and the description.

The Examiner states that Xiong is silent but Corbialis teaches terminating the connection only when the data channel is at least partially required for transmitting a second data burst. Applicants respectfully disagree. Xiong explains, at col. 4, lines 58-61, If the bit rate of a flow of bursts drops below the given threshold, part of the reserved data channel 205 is not being used that, thus reservation of the data channel 205 will be terminated. Regarding Xiong, col. 4, line 54 the reservation of a channel and the reservation termination is executed by the transmitting node according to the data rate. According to the instant invention, no channel reservation is done for an "on-the-fly" connection, which may be interrupted for an additional connection.

The Examiner further cites Corbalis, at col. 1, lines 54-55, which states in part: "Problems with re-arrangeable non-blocking switches include the fact that the required device settings to route connections through the switch are not determined easily and that connections in progress may have to be interrupted momentarily while rerouting takes place to handle the new connections." (Corbalis, col. 1, lines 53-59). However, Corbalis discloses a switch fabric, which

does not relate to the instant invention. As described in col. 1, lines 54-59: Problems with re-arrangeable non-blocking switches include the fact .... that connections in progress may have to be interrupted momentarily while rerouting takes place to handle new connections.

Claims 12, 13 and 18 have been rejected under 35 USC 103(a) as unpatentable over Xiong, Corbalis, further in view of Garland; Claim 15 has been rejected under 35 USC 103(a) as unpatentable over Xiong, Corbalis, further in view of Stilling; and Claims 16-17 have been rejected under 35 USC 103(a) as unpatentable over Xiong, Corbalis and Stilling, further in view of Garland. The rejections are respectfully traversed for at least the reasons presented in the arguments above.

In light of the foregoing, Applicants respectfully submit they have addressed each and every item presented by the Examiner in this Office Action. Favorable reconsideration of all of the claims, as amended, is earnestly solicited. Applicants submit that the present application, with the foregoing claim amendments and accompanying remarks, is in a condition for allowance and respectfully request such allowance.

In the event any further matters requiring attention are noted by Examiner, or in the event that prosecution of this application can otherwise be advanced thereby, a telephone call to Applicants' undersigned representative at the number shown below is invited.

Further, Applicants hereby petition for the Commissioner to charge any additional fees or any underpayment of fees which may be required for this Amendment and which may be required to maintain the pendency of this case at any time during prosecution, or to credit any overpayments, to Deposit Account No. 04-1061.

Respectfully submitted,

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